



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/706,144	11/12/2003	Frederick B. Reiter JR.	DP-302291	6071
22851	7590	08/13/2004	EXAMINER	
DELPHI TECHNOLOGIES, INC.			MULLINS, BURTON S	
M/C 480-410-202			ART UNIT	
PO BOX 5052			PAPER NUMBER	
TROY, MI 48007			2834	

DATE MAILED: 08/13/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/706,144

Applicant(s)

REITER ET AL.

Examiner

Burton S. Mullins

Art Unit

2834

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 45-70 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 62-70 is/are allowed.
- 6) ☒ Claim(s) 45-61 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Preliminary Amendment

1. Claims 1-44 have been canceled in accordance with the application papers filed 11 December 2003. This application is a divisional of parent application 09/970,105.

Claim Rejections - 35 USC § 112

2. Claims 45-61 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In claims 45 and 53, recitations “each having an optional intermediate magnetically non-conducting bridge segment” and “optional bridge segments comprise...” are vague and indefinite. It is not clear if the phrase “each having an optional” includes or excludes the bridge segments. For purposes of examination, “optional” has been treated as excluding the bridge elements.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 45-47, 49, 51-54, 56 and 58-59 are rejected under 35 U.S.C. 102(b) as being anticipated by Hosoda et al. (JP 8-340666). Hosoda teaches a powder metal rotor for a circumferential type interior permanent magnet machine (Figs.1&6) comprising: alternating

Art Unit: 2834

magnetically non-conducting barrier segments 10/20 and embedded circumferentially extending permanent magnets 5/21, the permanent magnets 5/21 alternating in polarity, and radially outer magnetically conducting segments 9/19 embedding the permanent magnets 5/21, wherein the magnetically non-conducting barrier segments 10/20 comprise pressed and sintered non-ferromagnetic powder metal (translation, ¶23&25) and the outer magnetically conducting segments comprise pressed and sintered soft ferromagnetic powder metal (e.g., Permalloy). The limitation of the intermediate magnetically non-conducting bridge segments have not been read into the claims since these elements are “optional”.

Regarding claims 46 and 53, note the region of through hole area 2, between magnets 21 and shaft hole 6, is filled with an inner annular magnetically conducting segment (Fig.6).

Regarding claims 47 and 54, Permalloy comprises a soft ferromagnetic powder metal such as Ni, Fe, Co or an alloy thereof.

Regarding claims 49 and 56, the non-ferromagnetic powder metal is an austenitic stainless steel (translation, ¶21).

Regarding claims 51 and 58, the powders are pressed in the die along an axis, followed by sintering (translation, ¶25). The permanent magnet powder comprises a hard ferromagnetic powder.

Regarding claims 52 and 59, limitations of methods of manufacture are not read into apparatus claims. It has been held that “[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is

unpatentable even though the prior product was made by a different process.” In re Thorpe, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 48 and 55 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hosoda in view of Achikita et al. (US 5,091,022). Hosoda does not teach that the soft ferromagnetic powder metal is a high purity iron powder with a minor addition of phosphorus.

Achikita teaches a soft ferromagnetic powder comprising Fe and P with uniform distribution and excellent soft magnetic characteristics (c.1, lines 56+).

It would have been obvious to employ a soft ferromagnetic powder with Fe and P per Achikita in Hosoda since this would have been desirable to provide uniform distribution and excellent soft magnetic characteristics.

7. Claims 50 and 57 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hosoda. While Hosoda does not teach that the magnetically non-conducting barrier segments 10/20 comprise AISI 8000 series steel, this would have nevertheless been obvious to one of ordinary skill in the art since it has been held that selection of a known material on the basis of

Art Unit: 2834

its suitability for the intended use is a matter of obvious design choice. In re Leshin, 125 USPQ 416.

Allowable Subject Matter

8. Claims 60-61 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims. The prior art, in particular Hosoda, does not teach the claimed star-shaped magnetically non-conducting insert of pressed and sintered non-ferromagnetic powder, with each tip portion of the star-shaped insert extending toward a respective permanent magnet; or an inner annular magnetically non-conducting segment of pressed and sintered non-ferromagnetic powder metal radially inward of the inner annular magnetically conducting segment.

9. Claims 62-70 are allowed. The prior art does not teach or suggest the claimed powder metal rotor including, inter alia, radially outer magnetically conducting segments each having an intermediate magnetically non-conducting bridge segment extending radially from a permanent magnet to an outer circumferential surface of the disk.

Conclusion

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Burton S. Mullins whose telephone number is 571-272-2029. The examiner can normally be reached on Monday-Friday, 9 am to 5 pm. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2834

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Burton S. Mullins
Primary Examiner
Art Unit 2834

bsm
10 August 2004